

Areas For International Collaboration

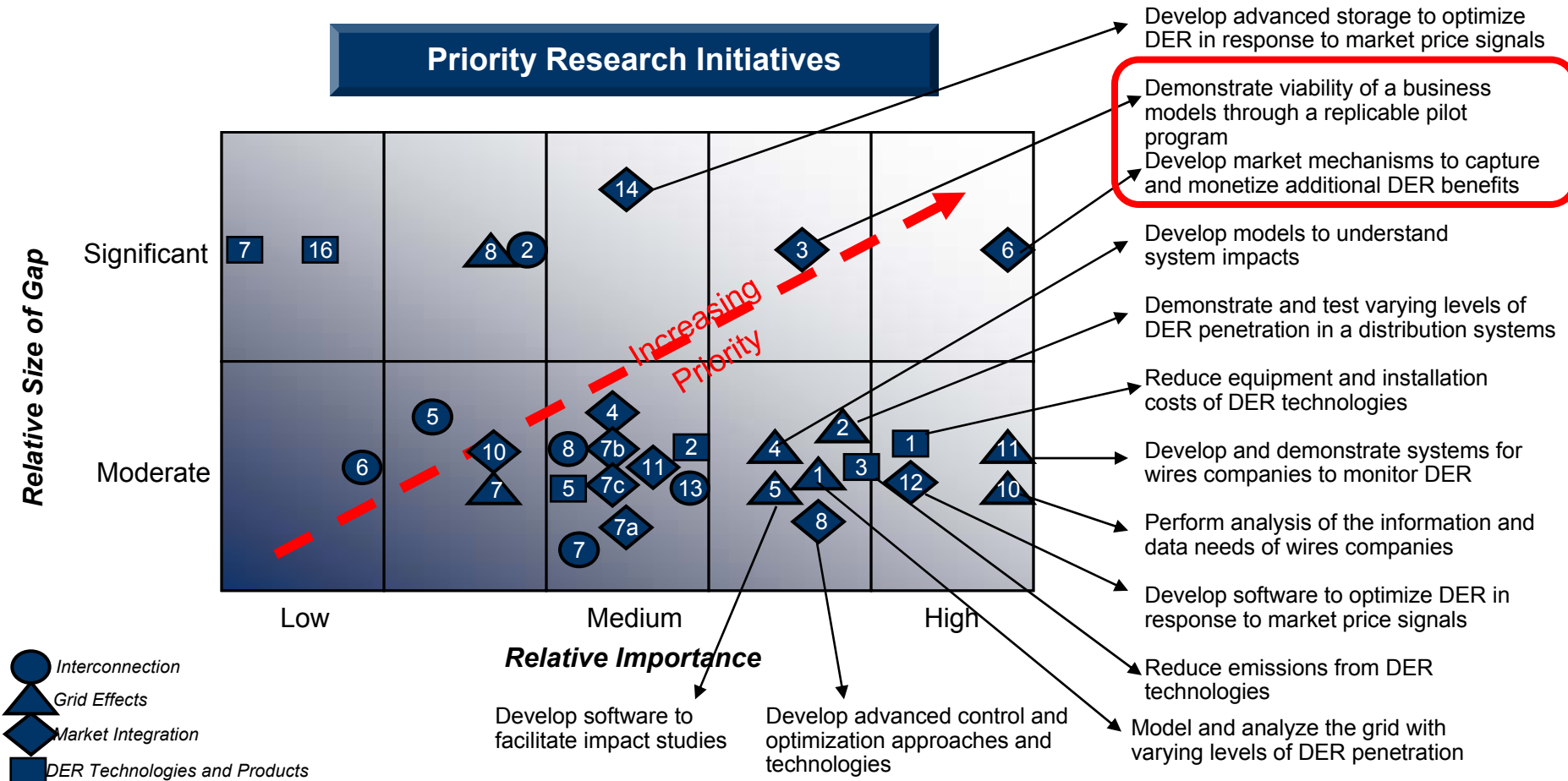
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Mark Rawson, DER Integration Program Manager
Public Interest Energy Research (PIER)
California Energy Commission

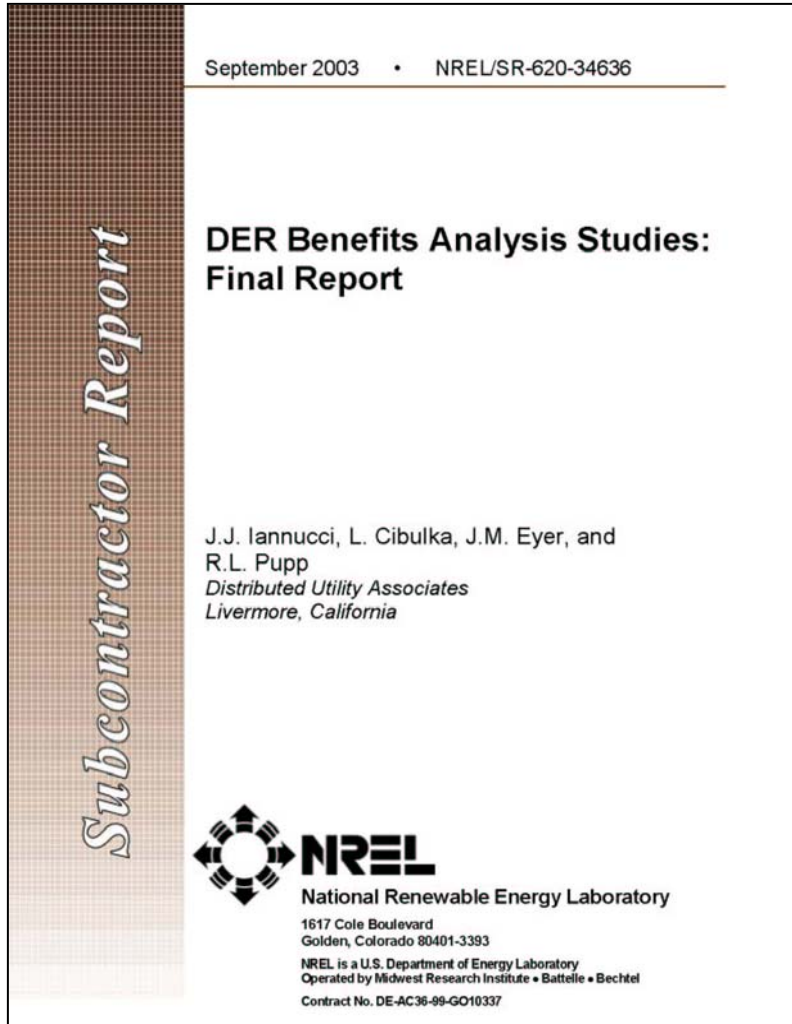
High Priority Initiatives

California's DER Integration R&D agenda is driven by what's needed to encourage more DER business models to be successful.



Greatest benefit from international collaboration would be in area of information exchange.

Cost and benefits of DER have been analyzed in great detail.



- The late Joseph Iannucci did an assessment of over 124 studies on the subject
- Key benefits seem to be:
 1. Generation capacity deferral
 2. Transmission capacity deferral
 3. Distribution capacity deferral
 4. Voltage control or VAR supply
 5. Ancillary services
 6. Environmental or emissions benefits
 7. Reduction in system losses
 8. Energy production savings
 9. Reliability enhancement
 10. Power quality improvement
 11. Combined heat & power
 12. Demand (charge) reduction
 13. Standby generation
- Time has come to demonstrate these benefits in real world

Some benefits have been demonstrated, others have not.

- Benefits that accrue directly to the end use customer are being readily demonstrated today – business models mature
 - Reliability enhancement (customer)
 - Power quality improvement
 - Combined heat & power
 - Demand (charge) reduction
 - Standby generation
- Utility system benefits less demonstrated, if at all
 - Generation capacity deferral
 - Transmission capacity deferral
 - Distribution capacity deferral
 - Voltage control or VAR supply
 - Reliability enhancement (utility)
 - Ancillary services
 - Environmental or emissions benefits
 - Reduction in system losses
 - Energy production savings
- Need to monetize these system benefits and demonstrate them on wide scale
- Implementation of hardware and large pilot programs much more costly

Collaborative information exchange and strategically planned demos can make this achievable

Creating international clearinghouse for exchanging “lessons learned” from demonstrations will benefit everyone

- Suggest collaborators plan and execute demonstrations of system benefits of DER
- Suggest collaborators implement regulatory actions to create market mechanisms which allow for these benefits to be provided and compensated for
 - Create incentives for DG customers and utilities to implement DG
 - Create incentives for utilities to embrace DG
- Suggest collaborators create clearinghouse for sharing information so we:
 - Do not reinvent the wheel
 - Build upon each others experiences
 - Move DER from the sidelines to mainstream of electricity enterprise

Contact Information

California Energy Commission

Mark Rawson (916) 654-4671
mrawson@energy.state.ca.us

California Energy Commission DG Website Resources

www.energy.ca.gov/distgen

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